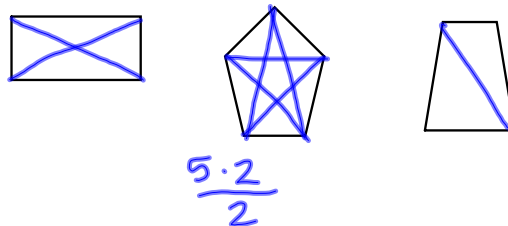






## Chapter 8 Quadrilaterals

## 8-1 Find Angle Measures in Polygons

diagonal--segment that connects nonconsecutive vertices

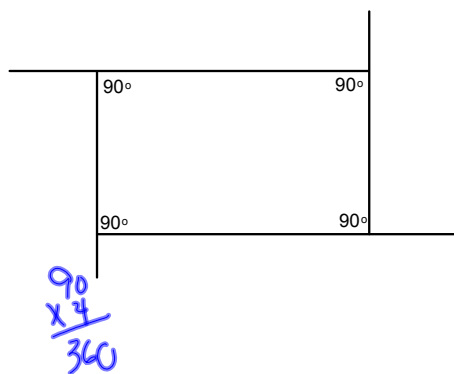
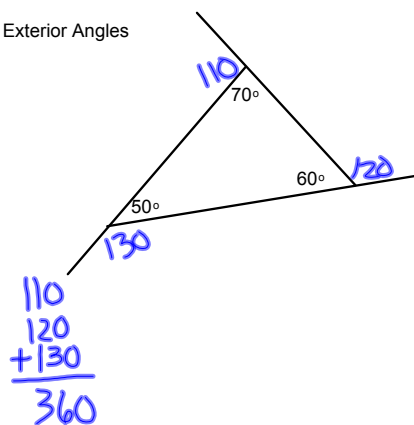


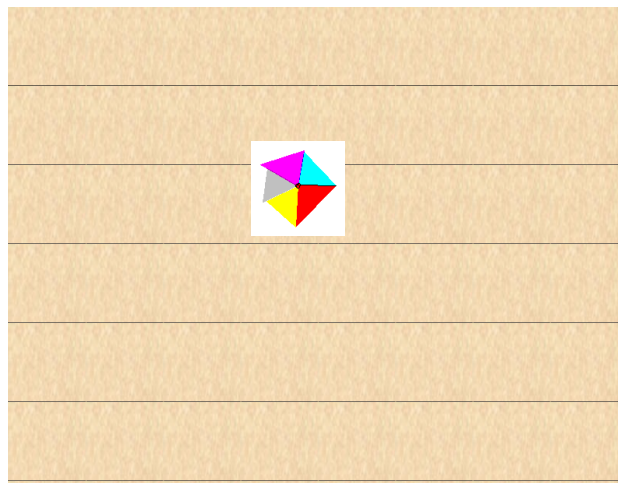
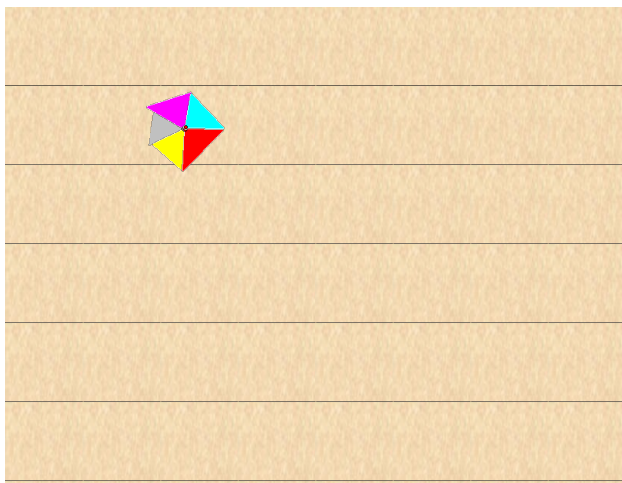
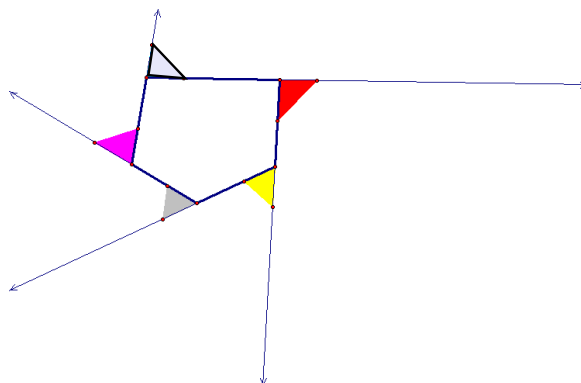
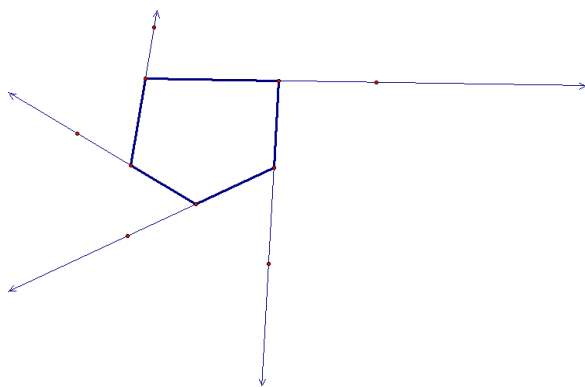
				
sides	3	4	5	6 } n
# of $\Delta$ s	1	2	3	4 (n-2)
degrees	180	360	540 <small>3 x 180</small>	720 <small>4 x 180</small>

**Theorem 8.1 Polygon Interior Angles Theorem**  
In a convex polygon with  $n$  sides, the sum of the interior angles is  $(n-2)180$ .

**Corollary to Theorem 8.1--Interior Angles of a Quadrilateral**--the sum of the measures of the interior angles of a quadrilateral is  $360^\circ$ .

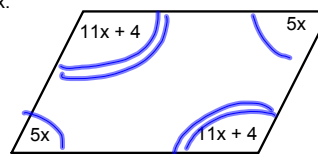
Exterior Angles



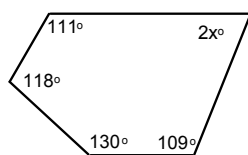


**Theorem 8.2 Polygon Exterior Angles Theorem--**  
In a convex polygon, the sum of the measures of the exterior angles, one at each vertex, is  $360^\circ$ .

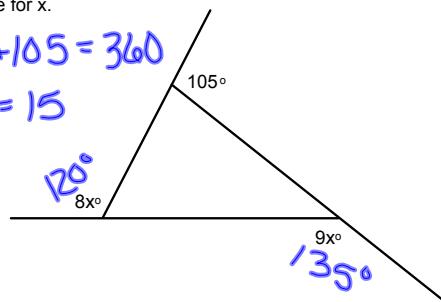
Solve for  $x$ .



$$x = 11$$

$$(5-2)180$$


$$2x + 111 + 118 + 130 + 109 = 540$$
$$x = 36$$

$$17x + 105 = 360$$
$$x = 15$$


d equiangular

n	6
interior angle sum	$(6-2)180$ $720^\circ$
exterior angle sum	$360^\circ$
<u>Regular</u>	
each interior angle	$\frac{720}{6} = 120^\circ$
each exterior angle	$\frac{360}{6} = 60^\circ$

n	10
interior angle sum	$1440^\circ$
exterior angle sum	$360^\circ$
<u>Regular</u>	
each interior angle	$144^\circ$
each exterior angle	$36^\circ$

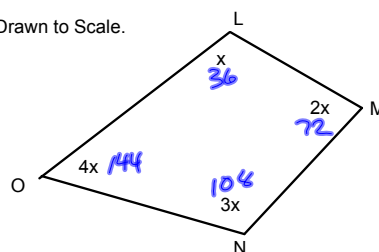
n	15
interior angle sum	$2340^\circ$
exterior angle sum	$360$
Regular	$\frac{360}{24} = n$
each interior angle	$156^\circ$
each exterior angle	$180 - 156 = 24^\circ$

n	
interior angle sum	
exterior angle sum	
<u>Regular</u>	
each interior angle	$168^\circ$
each exterior angle	

n	27	$\frac{360}{13\frac{1}{3}}$	$\frac{360}{\frac{40}{3}}$
interior angle sum	$4500^\circ$		
exterior angle sum	$360^\circ$		
<u>Regular</u>			
each interior angle	$166\frac{2}{3}^\circ$		
each exterior angle	$13\frac{1}{3}^\circ$		

n	DO: #1	#2
	12	24
interior angle sum	$1800^\circ$	$3960^\circ$
exterior angle sum	$360^\circ$	$360^\circ$
<u>Regular</u>		
each interior angle	$150^\circ$	$165^\circ$
each exterior angle	$30^\circ$	$15^\circ$

Not Drawn to Scale.



Which sides are parallel?

$\overline{LM} \parallel \overline{ON}$   
 Cons. Int. Ang. Converse

HW  
 p510-511  
 #s 3-5, 7-9, 12-15, 19-21, 26